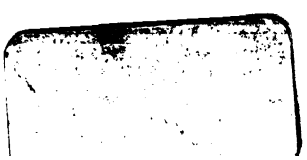

THE IRRIGATION QUESTION.

MEMORANDUM

By
WM. HAM. HALL,
STATE ENGINEER.

Transmitted to the Legislature of California.

GEORGE STONEMAN,
GOVERNOR.

SACRAMENTO:
STATE OFFICE, : : : JAMES J. AYERS, SUPT. STATE PRINTING.
1886.

STATE OF CALIFORNIA, EXECUTIVE DEPARTMENT,
SACRAMENTO, CAL., July 17, 1886.

Colonel WM. HAMMOND HALL, *State Engineer:*

SIR: I have called the Legislature to assemble in extra session for the purpose of considering certain fundamental points relating to the irrigation question in California, which are recited in my proclamation of yesterday, the sixteenth instant.

You have, under legislative instruction, been engaged in studying this question, and are instructed by law to report your opinion as to "the principles which ought to govern" in its elucidation. In my judgment it is essential that the results of your studies should be placed before the members of the Legislature immediately on their assembling, and in as condensed a form as possible. You will, therefore, please prepare an abstract of your opinions on the points at issue, and which are to be treated under specifications first, second, and third of my proclamation, and hand it to me at the earliest practicable moment, for transmission to the Legislature.

GEORGE STONEMAN,
Governor.

OFFICE OF THE STATE ENGINEER,
SACRAMENTO, July 20, 1886.

To His Excellency GEORGE STONEMAN, *Governor of California:*

SIR: Your communication of the seventeenth instant, calling upon me for an abstract of my report upon the irrigation question as now presented in this State, has been carefully considered, and, in response, I beg leave to hand you the inclosed brief statement.

As you have suggested, I have endeavored to make it as concise and pointed as possible. To accomplish this end, many statements are left unsupported by argument or explanation or relation of facts. I can only say that I stand ready to explain them in any particular they or any of them require it.

Very respectfully,
Your obedient servant,

WM. HAM. HALL,
State Engineer.

MEMORANDUM.

THE IRRIGATION QUESTION IN CALIFORNIA.

California is preëminently an irrigation country, and the proper settlement of the questions now before the public, on this subject, is not only of vital interest to the present irrigation districts, but is of primal importance to the future well-being of every county in the state.

There must be irrigation laws in irrigation countries. Such countries are, perforce, classed as "irrigation," because subjected to physical conditions which render necessary customs and laws not desired in other climates.

There are no irrigation laws worthy of the name in California. In this respect our state is far in the rear of any other civilized country where irrigation has attained nearly so high a degree of development.

The detriment which this condition of things has been to the country—the extent of its check on advancing prosperity—is immeasurably great, and can only be appreciated upon intimate acquaintance with the physical facts and the history of our agricultural growth.

A BASIS FOR SYSTEMIZATION.

Some defined water-right policy must underlie every system of irrigation legislation and administration.

The ownership and control of streams—whether by governments, by the people in common, or by individuals—constitutes the starting point of all water-right systems.

In countries where irrigation is highly developed, streams and their waters are, generally, the property of the public—or of the people in common—and are under control of, and supervision by governmental authorities.

In such countries riparian proprietors have certain limited privileges defined by statute, but rights to divert water from streams, are conceded to individuals, communities, and companies, generally, by the governments as representing the people.

In England, where irrigation is not a common practice, and in several of her colonies and the states of the United States where irrigation is just now struggling for legal existence, there are no general systems of public control and supervision of streams.

In England the common law virtually makes riparian proprietors guardians of streams, and these persons, companies, or corporations appealing to the courts in defense of their individual rights, protect the water-courses but indirectly.

In projecting any system for the promotion and government of irrigation and the conservation and administration of streams in California, it is necessary that we know at the outset upon what basis, as to ownership of natural water-courses, we are to proceed.

Although it is not my province officially to express an opinion as to whether or not the English law of riparian rights has become a rule of property in California, I freely say that, in my opinion, it is a great misfortune for the state if it is the law.

This law, which accords to the riparian, or bank owning, proprietors a property right in natural streams, has never yet been made the basis of an irrigation system, and is wholly unsuited for such application.

Irrigation in a country like California is a necessary common or public use of waters, which can only be efficiently founded upon public control of water supplies, and this, in turn, must rest on public ownership of streams.

Hence, the irrigation legislative system for California should be based upon the principle of public ownership of water-courses, and not upon that of private ownership of streams which the English riparian rights doctrine recognizes.

Such privileges or rights as it may be just and equitable to accord riparian proprietors should be defined by statute, at least if they can not be by the courts, and be protected by administrative action as well as by power of appeal to courts.

The custom of appropriation of waters practiced in California is an application of the doctrine of public use of waters. But it is not the only alternative to the system of condemnation necessary to be set up if private ownership of streams is recognized.

We must clearly distinguish between the fundamental principle of public ownership and control of streams, and the unguarded custom of appropriation which no legislation and crude legislation has permitted and encouraged to grow up under it.

Because in the past California has permitted and encouraged unlimited and unregulated appropriation of waters is no reason why the ownership of natural streams which by the law of nature belong to the public, should be vested in riparian land owners for the protection of such streams.

Because two opposing, powerful, private interests champion, respectively, "appropriation" and "riparian rights"—each affirming that the other is actuated only by private concern—is no reason why the fact should be lost sight of that the first right is founded on public ownership and is or can be subjected to public control, and that the other is founded on private ownership of streams, and can not be thus regulated for the public good.

Once vest in the state the ownership of all water-courses and waters not rising and continuing on one piece of private property, and excepting, also, those the property of the United States, and we will have established the basis of safe and efficient water-course laws and administration, on which alone can rest an operative system of irrigation legislation.

Once vest in the individual owners of lands bordering on streams a right of property in the streams themselves and we have set up a right contrary to natural law, which must of necessity conflict with public administration, and on which an operative system of irrigation legislation can not be founded.

The state of California has everything to fear from the private ownership of natural water-courses. She can have nothing to fear from owning and administering them herself. The people of California compose the state. Their prosperity and safety in the future depends upon the conservation and economical use of

waters. It is time that the state government were acting in behalf of the people.

The custom of appropriation of water should rest upon the principle of inalienable public ownership thereof, namely, that all things which are necessary for human use in common, such as air, running water, etc., are public; and, hence, that the state, representing the people, may sanction appropriation as a means of apportioning the waters to those who can distribute them to best advantage for the public good.

The riparian right of property in streams is upheld upon the principle that all which rests upon, grows out of, or lies underneath of land belongs to the land owner and is subject to his exclusive use and control; and, hence, streams, inclusive of waters, resting upon lands in private ownership, belong to the proprietors thereof.

The principles of public ownership and control of streams are correlative with those of a fair measure of popular freedom from monarchial and feudal rule, and in history they have been repeatedly striven for and obtained by measures akin to revolution.

That of private ownership of natural water-courses is the outgrowth of monarchial and feudal monopoly of the choice and controlling property interests of a country, and has everywhere been antagonized by popular opinion and resisted by popular clamor, protest, and action, for centuries past.

It would certainly be an odd spectacle, in this day and generation and under a popular government, to see the great commonwealth of California appealing to the few riparian proprietors to protect the courses and conserve the waters which drain from wide empires of public domain: leaning, under pretext of public necessity and common welfare, upon that principle of private monopoly of an element the use of which is necessary to all men, against which the people of countries under monarchial governments have been openly fighting for generations, and which they have in notable instances set aside or abridged for the public good.

The English riparian ownership of streams may be an established rule of property in California, but if so it will prove here a multiplication of the established curse it has been to the country where it originated.

The principles which I have said *ought* to govern may now be impracticable here, because the individual owners of bank lands own the waters which touch them, but it should not be understood that such ownership is a conservator of public interests or is founded on any principle of popular right.

It may be that the custom of water appropriation which has grown up in this State will, unmodified, lead to onerous monopoly of diverted waters and the unjust injury of private rights without due compensation, but this should be no excuse for welcoming a ruling which fixes as a part of our law an exclusive private property right in waters in natural streams.

We should, if possible, ground our system upon the true principle of inalienable public ownership of water-courses—channels and waters—and establish regulations which will prevent the evils of water monopoly in artificial works.

If the streams—channels and waters, whether appropriated or not—belong to the state, it is entirely within the province of the legislature to correct any and all abuses which have grown, or to prevent such as might grow, out of the custom of water appropriation in California.

It is within the power of the legislature to provide for the protection of equitable private rights on streams, even though riparian proprietors be denied the right of property, in the stream itself, which the English common law accords them.

It is within the power of the legislature to provide for the complete protection of streams if the common law property rights therein, of riparian proprietors, be denied in this state.

It needs neither the recognition of the common law rights of riparian proprietors nor the action of legislature, to establish a basis for the protection of navigable streams, although it is necessary to provide state administration of water-courses to check practices which insensibly damage them.

But it is *not* within the power of legislature to provide for an efficient administration of streams, or operative system of water-rights, under a law which accords a property right in the streams themselves to the bank owners.

The difference of result under the two general systems of water-course law results from this:

Under the Common law system, both public and private use of waters, and public control of water-courses, are subordinated to private ownership of streams and waters.

Under the Civil law system, all rights to streams or waters or to their use, are subordinated to public ownership and control thereof.

Public control does not mean construction of public works, interference with private industry, or the maintenance of an army of officials. After due adjustment, a very little inspection would constitute the state's part of such a system for California.

It is not alone the irrigation interest which has made state control of water-courses necessary in California, as has been abundantly proven by experience.

The mining debris evil is an outgrowth of the common law system of riparian rights. It never would have assumed damaging proportions under a civil law system of state supervision of water-courses. Capital would never have been largely invested in hydraulic mining if warned in time.

The time is coming when the deposit of sewage and factory offal in our streams will render them foul and even noxious, and will impair their channel-ways. This result will grow under a common law system of riparian rights, as it has elsewhere, because it can not be stopped by a riparian complainant until a damage is imminent, will not be stopped until it is apparent, and is always hard to put an end to under this system.

Under the English system of riparian rights invariably grow up many riparian and public wrongs which are noticed and appreciated only after it is too late to prevent and often too late to ameliorate them.

Under this system the right to protect one's self and the stream because of riparian proprietorship, is accompanied with the unregulated right to do many things to the stream which in the aggregate result in great harm.

Under a civil law system of control of streams, all acts which may affect the stream or its waters, are subject to supervision and

conditions from the beginning. No seriously damaging results can accrue if the administration is efficient.

The general ownership and management of irrigation works by the state or the United States, as a basis for irrigation development and practice, while it might be made to do away with the present riparian right conflict and with those conflicts which now arise between appropriators, would insure an unending series of contests between governmental officers and the users of water, and would necessitate such an army of employés as would make the system a curse to the land.

This state or the general government could to much better advantage own and operate railways, telegraphs, city water supply works, or even gas works, than the irrigation works in California. These latter, as a general thing, are not and can not be made large unified systems which may to advantage be operated by employed overseers. The irrigation works of California are destined to number in the thousands, as they do now high up in the hundreds, and for the most part can only be profitably managed by those who use the water.

The ownership of all natural streams—channels and waters—not rising and flowing on one piece of property, and not the property of the United States, should be vested in the state, and remain forever in the state, whether heretofore appropriated or at any future time appropriated or not.

The ownership of all irrigation works and of the water-rights thereto belonging should, in each case, become attached to the lands served in irrigation.

This end is being accomplished in many cases of irrigation development in California, and may be brought about in all, under a proper system of state laws, in the course of time.

It can not be imposed as a condition at the outset of irrigation work, without so far hampering enterprise as to be a very serious hindrance to the growth of industry—indeed, without absolutely prohibiting very many enterprises of all sizes and grades and of the first importance to state prosperity.

Under proper state laws the interests of land-owners, irrigators, and of the public generally may be conserved, the dreaded evils of water monopoly be averted, and the desired end of control of distribution by those who actually use the waters may be accomplished, and without embarrassing or prohibiting private or corporate enterprise in the construction of new works.

Irrigation in California can not be developed under any one form of enterprise. The physical, social, and political conditions are such that great latitude must be allowed individual exertion in inaugurating and carrying out works, else our plains and foothills will very long remain unirrigated. There are not only many examples at home but a great fund of precedent abroad to substantiate this conclusion.

The state may impose conditions upon diverters, which will insure the conservation, economical use of, and accounting for public waters, and their ultimate attachment to the lands irrigated; may direct and control works in streams, so as to guard these public properties from injury; may advise upon and collect and furnish information concerning irrigation works and practice, so as to contribute to and enhance good results; but she can not interfere with private enterprise, direct the forms of organization, specify rigidly the location or style of works (except in the stream beds and banks), or designate beforehand the lands to be irrigated by any system of works or diversion of waters, without actually paralyzing the chief and growing industry of the country.

A system of irrigation can not be developed in a barren, desert country, as is a large part of California where irrigation is most to be desired, upon the basis of an original valuation in the lands to be irrigated, and through the offices of a community of people resident upon those lands: 1st, because the value is not in the land until after water is put upon it and cultivation has progressed: and, 2d, because people can not live and be supported on the lands until after capital, in some form, has been expended in bringing out the water.

Therefore, the use of capital in some form must, in almost every instance, precede the presence of population sufficient for the organization of "farming communities," in very many irrigation districts in California.

The acquirement of, or prior claim to the water-rights must precede the use of capital and labor in construction of works, else capital and labor are in jeopardy, and will not undertake the enterprise.

Hence, a system which necessitates the organization of "farming communities" and the acquirement of water-rights by condemning riparian rights before irrigation works can be constructed, would have doomed a large part of the present irrigated districts of California to perpetual sterility, may, if enforced, unnecessarily and unjustly return much of this reclaimed land to its barren condition, and will prevent the development of very much of that which yet lies unoccupied.

The public good in California demands that all available waters be used in irrigation.

In South California this means all waters that can be taken on the surface or brought to the surface of the ground; and the taking and the bringing should be exercised where and how the least measure of loss will be sustained: All interests unite in wanting the waters out of the streams and not in them.

In the southern part of the great central valley of the state the same rule applies, and the unity of interest in the demand for water out of the streams holds good, save only that lower riparian proprietors insist that the water be allowed to run to them so that they may divert and use it, or so that it may spread and naturally irrigate their lands.

Wherever, as in the San Joaquin and the Sacramento valleys, there are navigable rivers, the availability of water for irrigation must be secondary to the requirements of navigation as interpreted by the United States authority, which alone has power to permit the abridgment of the navigable qualities of a stream.

The proposition that irrigators should be content with using the "surplus waters of streams" is not reasonable as a solution of the question in the half of the state where irrigation is most needed:

First, in South California, because there is absolutely no surplus over and above the necessities of irrigation at the time when the crops there raised most need water; second, in the south-

ern half of the great central valley, because, if its resources are to be developed, there will be required for the purpose much more water than riparian proprietors will rank as being surplus; and, third, in both regions named, because, as understood by those who propose the compromise, it would result in the loss of enough water by percolation into stream beds to irrigate and make fruitful an empire of territory.

The proposition that the surplus waters of full and flood periods of streams flow be stored for use in irrigation at times when demand is greater than current supply, is impracticable as a general solution of the irrigation water-supply question:

First, because practicable storage sites of nearly sufficient number and capacity are not in existence; and, second, because the storage of water, as a general rule, costs more than pioneer irrigation enterprise can afford.

That there are very many good, and some most excellent sites for water storage, commanding irrigation districts, is true. That some of these are being availed of, and others will be brought into use from time to time, is equally true. But with all that can or ever will be done in this way, in the southern half of the state, the waters of streams, not required in them because of greater *public* necessity, will be needed out of them to meet the general public necessity for irrigation.

The doctrine of riparian rights, as laid down in the recent decision of the Supreme Court of California, is opposed to the public welfare in any country, but especially in one where irrigation is a necessity, as it is in this state.

It virtually gives to the owners of stream banks a monopoly of streams, including the waters thereof: the public control and use is subordinated to the private property rights of those who hold the waters, and not necessarily for use.

The fact that these rights can be condemned by "farming communities," for use in irrigation, does not alter the case. All private property is subject to condemnation for public use, when the use can be shown as a public necessity.

There can be no question but that by nature the waters are public; and if the law of nature were followed out, we should

accord the public waters a primordial right to occupy channels carved by them on the face of nature, as by the hand of God, without subjecting them and their channels to the ownership of him who happens to possess the property bordering thereon, or even the soil of their beds.

In this connection we must clearly hold in view the difference between a channel and the soil which constitutes its bed and banks: for this ground may yet be in private ownership.

In the same way, public waters being taken under plea of public benefit by diversion and use, should always remain public property, subject to state control, although the channels or works into which they are taken be in private ownership.

In establishing a system of irrigation laws for California, if we are to proceed upon the basis of the English common law as applied to water-courses, we must provide for the organization of all irrigation enterprises, excepting those of individual riparian proprietors, into public, or quasi-municipal corporations, with power to assess or levy taxes within themselves, and to condemn private rights for their public use.

Under this system it will yet be necessary to have a state administrative control to guard the streams and administer rights, else we will have eternal wrangling as bitter as now. Yet such administration under this system of law will not and can not prevent those conflicts which will arise between the administration and riparian proprietors, and between these latter themselves.

If we are to proceed upon the basis of public ownership of streams and waters, we must have a system recognizing the right of appropriation, but regulating diversion and use under rights thus acquired; or one providing for the issuing of water-rights by administrative authority, and for the regulation of water diversions, by such authority.

This system will necessitate local control of streams in natural water districts, and an accounting to and power of appeal to a central state authority.

Under this system, or any, in fact, it will be not only expedient but necessary to have a law for the organization of farming

neighborhoods into irrigation districts with the powers of quasi-municipal corporations.

Such organizations will not necessarily be of those who own the canals, but always of those who use the waters, and would be necessarily formed only where the land owners in a district desired organization of the kind.

That which has thus far been said relates entirely to the principles and forms which ought to underlie and shape an irrigation system in California. As to the definite measure of privilege which ought to be accorded riparian proprietors, it is not a part of my duty to report an opinion.

There will, of course, always be differences of opinion on this point. The exact extent of privilege to be accorded different classes of land owners or citizens is a subject for representative legislative determination. It is my duty only to indicate the principles which ought to govern in framing irrigation legislation, and the outline of general measures embodying such principles.

The point made and insisted upon in this memorandum, as a matter of principle, is: That riparian privileges should rest, not upon the, so-called, natural ownership of streams, but upon statutory enactment and be subjected to the same measure of control that those of the public, or other individuals are subjected, in the matter of diversion of waters and management of streams, as they are in other irrigation countries.

Riparian proprietors should have grounds for actions at law to recover for actual damage consequent upon diversions above.

They might be given preferred rights to water for stock and domestic purposes.

They might be given authority to appropriate, and thus hold, water in streams to the extent of their actual, demonstrable, and economical use thereof.

They might be given preferred privileges of appropriation for diversion and irrigation.

In other words, they *might*, by statutory law, be given all the advantages which, as now claimed, the situation of their lands

naturally commands for them, to the extent of actual benefit availed of by them, or to any other extent, if equitable and the people as represented chose to make the law.

But they never can be given the *ownership* of the streams and of the waters in an irrigation country, as is contemplated by a recent decision of the Supreme Court of this state, and have recourse by injunction against all diverters of waters, not riparian proprietors, without its proving an incalculable hindrance to the development of the country, and almost an insurmountable barrier to the inauguration of a proper public control of water-courses.

The affirmance of the riparian rights doctrine might drive water appropriators to an opposite extreme ground in order to combat it, and in the endeavor to escape this incubus of private ownership of natural streams and waters, an unregulated right of unlimited appropriation might be set up which might lead to monopoly of waters in private canals and reservoirs. But this result may very readily be averted in legislative action.

If by legislation and constitutional amendment the streams and waters in this state—whether already appropriated or not, or appropriated at any time or not—can be assured as public property—not susceptible of private ownership by any one—and their use clearly declared to be subject to legislative control and regulation, it ought to be done; and when it is done the foundation will have been laid for operative and equitable irrigation legislation, and administration of water-courses.

These conclusions are grounded upon a study of the fundamental principles spoken of, as applied to the facts we have to deal with in California, and I am confirmed in them by a review of the lessons afforded by countries, such as England, France, Italy, Spain, and others, where experiences with several systems have developed contrasting results.

This memorandum is necessarily general in its terms, and dogmatic in style, seeing that it is intended to announce only primary conclusions. To fully substantiate all its assertions by illustra-

tion and argument would prolong its preparation beyond the limits of time available now for the purpose. The third part of the final report on irrigation, now in preparation, of which this is a partial outline of conclusions, will deal with each point here made, in all necessary detail.

Very respectfully submitted.

WM. HAM. HALL,
State Engineer.

To His Excellency:

GOVERNOR GEORGE STONEMAN.